

| Ref # | Hits | Search Query   | DBs   | Default Operator | Plurals | Time Stamp       |
|-------|------|--|---|------------------|---------|------------------|
| L1    | 16   | ((("3,467,906") or ("3,828,231") or ("4,794,346") or ("5,305,412") or ("5,436,759") or ("5,604,628") or ("5,805,322")).PN.   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | OFF     | 2005/07/27 11:25 |
| L2    | 423  | communic\$5 and fiber and VCSEL and (dop\$4 near3 (layer or type or medium or film)) and (semiconductor near3 (layer or film or medium or region or type or material)) and (mirror or reflect\$4)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2005/07/27 12:50 |
| L3    | 1    | 2 and (trap\$4 near2 like near2 defect) and (lattice near3 mismatch)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2005/07/27 12:17 |
| L4    | 7    | 2 and (trap\$4 near2 defect\$4) and (lattice near3 mismatch\$3)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2005/07/27 12:35 |
| L5    | 60   | 2 and (defect) and (lattice near3 mismatch\$4)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2005/07/27 12:18 |
| L6    | 7    | 4 and 5  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2005/07/27 12:18 |
| L7    | 9    | ("5034783"   "5181086"   "5404027"   "5538918"   "5617446"   "5867516"   "5991321"   "6399970").PN. OR ("6647041").URPN.   | US-PGPUB;<br>USPAT;<br>USOCR                                      | AND              | ON      | 2005/07/27 12:23 |
| L8    | 39   | ("20020001112"   "20040012845"   "20040017604"   "3467906"   "3828231"   "4794346"   "5299054"   "5305412"   "5436759"   "5604628"   "5654822"   "5673141"   "5748653"   "5754571"   "5771320"   "5778132"   "5805322"   "5949807"   "5960024"   "5999293"   "6044100"   "6061156"   "6115517"   "6128115"   "6215583"   "6243407"   "6317531"   "6333799"   "6335992"   "6347104"   "6445495"   "6462865"   "6512629"   "6522462"   "6577654"   "6647041"   "6707600"   "6714344").PN. OR ("6909536").URPN. | US-PGPUB;<br>USPAT;<br>USOCR                                      | AND              | ON      | 2005/07/27 12:32 |
| L9    | 1    | communic\$5 and fiber and VCSEL and ((dop\$4 near3 (layer or type or medium or film)) same (semiconductor near3 (layer or film or medium or region or type or material))) and (mirror or reflect\$4) and (trap\$4 near2 defect\$4) and (lattice near3 mismatch\$3)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2005/07/27 12:38 |
| L10   | 1    | 9 and bulk near3 dop\$4  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2005/07/27 12:39 |

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| L11 | 4  | VCSEL and ((dop\$4 near3 (layer or type or medium or film)) same (semiconductor near3 (layer or film or medium or region or type or material))) and (mirror or reflect\$4) and (trap\$4 near2 defect\$4) and (lattice near3 mismatch\$3)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 12:48 |
| L12 | 2  | 11 and bulk near3 dop\$4  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 13:06 |
| L15 | 3  | fiber and VCSEL and ((dop\$4 near3 (layer or type or medium or film)) same (semiconductor near3 (layer or film or medium or region or type or material))) and (mirror or reflect\$4) and (trap\$4 near2 defect\$4) and (lattice near3 mismatch\$3)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 12:40 |
| L16 | 1  | 15 and bulk near3 dop\$4  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 12:39 |
| L18 | 7  | communic\$5 and fiber and Laser and (dop\$4 near3 (layer or type or medium or film)) and (semiconductor near3 (layer or film or medium or region or type or material)) and (mirror or reflect\$4) and (trap\$4 near2 defect\$4) and (lattice near3 mismatch\$3)                             | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 13:03 |
| L20 | 2  | laser and ((dop\$4 near3 (layer or type or medium or film)) laser (semiconductor near3 (layer or film or medium or region or type or material))) and (mirror or reflect\$4) and (trap\$4 near2 defect\$4) and (lattice near3 mismatch\$3) and (bulk near3 dop\$4)                           | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 12:51 |
| L21 | 7  | 18 and 6  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 12:51 |
| L22 | 7  | communic\$5 and fiber and Laser and (dop\$4 near3 (layer or type or medium or film)) and (semiconductor near3 (layer or film or medium or region or type or material)) and (mirror or reflect\$4) and (trap\$4 near2 defect\$4) and (lattice near3 mismatch\$3) and clad\$4 and confinement | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 13:04 |
| L23 | 17 | Laser and (dop\$4 near3 (layer or type or medium or film)) and (semiconductor near3 (layer or film or medium or region or type or material)) and (mirror or reflect\$4) and (trap\$4 near2 defect\$4) and (lattice near3 mismatch\$3) and clad\$4 and confinement                           | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 13:10 |
| L24 | 1  | 23 and bulk near3 dop\$4  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 13:11 |
| L25 | 15 | Laser and (semiconductor near3 (layer or film or medium or region or type or material)) and (mirror or reflect\$4) and (lattice near3 mismatch\$3) and (clad\$4 near4 dop\$4) and (confinement near4 dop\$4)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 13:13 |

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| L26 | 297 | Laser and (dop\$4 near3 (layer or type or medium or film)) and (semiconductor near3 (layer or film or medium or region or type or material)) and (mirror or reflect\$4) and (lattice near3 mismatch\$3) and clad\$4 and confinement  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:29 |
| L27 | 3   | Laser and (semiconductor near3 (layer or film or medium or region or type or material)) and (mirror or reflect\$4) and (lattice near3 mismatch\$3) and (clad\$4 near4 dop\$4) and (confinement near4 dop\$4) and (trap\$4 near2 defect\$4)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:26 |
| L28 | 1   | 27 and bulk near3 dop\$4   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 13:11 |
| L29 | 2   | communic\$5 and fiber and VCSEL and (semiconductor near3 (layer or film or medium or region or type or material)) and (mirror or reflect\$4) and (lattice near3 mismatch\$3) and (clad\$4 near4 dop\$4) and (confinement near4 dop\$4)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 13:13 |
| L30 | 15  | Laser and (dop\$4 near3 (layer or type or medium or film)) and (semiconductor near3 (layer or film or medium or region or type or material)) and (mirror or reflect\$4) and (lattice near3 mismatch\$3) and (clad\$4 near4 dop\$4) and (confinement near4 dop\$4)                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 13:14 |
| L31 | 1   | (VCSEL OR VLSOA OR Laser) and (semiconductor near3 (layer or film or medium or region or type or material) near4 dop\$4) and (mirror or reflect\$4) and (lattice near3 mismatch\$3) and (clad\$4 near4 dop\$4) and (confinement near4 dop\$4) and (trap\$4 near2 defect\$4)                        | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:28 |
| L32 | 5   | (VCSEL OR VLSOA OR Laser) and (semiconductor near3 (layer or film or medium or region or type or material) near4 dop\$4) and (mirror or reflect\$4) and (lattice near3 mismatch\$3) and (clad\$4) and (confinement) and (trap\$4 near2 defect\$4)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:28 |
| L33 | 1   | (VCSEL OR VLSOA OR Laser) and (semiconductor near3 (layer or film or medium or region or type or material) near4 dop\$4) and (mirror or reflect\$4) and (lattice near3 mismatch\$3) and (clad\$4 near4 dop\$4) and (confinement near4 dop\$4) and (trap\$4 near3 defect\$4)                        | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:28 |
| L34 | 1   | (VCSEL OR VLSOA OR Laser) and (semiconductor near3 (layer or film or medium or region or type or material) near4 dop\$4) and (mirror or reflect\$4) and (lattice near3 mismatch\$3) and (clad\$4 near4 dop\$4) and (confinement near4 dop\$4) and (trap\$4 near4 defect\$4)                        | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:28 |
| L35 | 6   | (VCSEL OR VLSOA OR Laser) and (dop\$4 near3 (layer or type or medium or film)) and (semiconductor near3 (layer or film or medium or region or type or material) near3 dop\$4) and (mirror or reflect\$4) and (lattice near3 mismatch\$3) and clad\$4 and confinement and (trap\$4 near4 defect\$3) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:31 |
| L36 | 6   | (VCSEL OR VLSOA OR Laser) and (semiconductor near3 (layer or film or medium or region or type or material) near3 dop\$4) and (mirror or reflect\$4) and (lattice near3 mismatch\$3) and clad\$4 and confinement and (trap\$4 near4 defect\$3)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:31 |

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| L37 | 15  | (VCSEL OR VLSEA OR Laser) and (semiconductor near3 (layer or film or medium or region or type or material) near3 dop\$4) and (mirror or reflect\$4) and (lattice near3 mismatch\$3) and (trap\$4 near4 defect\$3)                                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:31 |
| L38 | 14  | (VCSEL OR VLSEA OR Laser) and (semiconductor near3 (layer or film or medium or region or type or material) near3 dop\$4) and (mirror or reflect\$4) and (lattice near3 mismatch\$3) and (trap\$4 near4 defect\$3) and (active or gain) and substrate  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:44 |
| L39 | 430 | (VCSEL OR VLSEA OR Laser) and (semiconductor near3 (layer or film or medium or region or type or material) near3 dop\$4) and (mirror or reflect\$4) and ((lattice near3 mismatch\$3) or (trap\$4 near4 defect\$3)) and (active or gain) and substrate | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:42 |
| L40 | 358 | interface and 39  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:42 |
| L41 | 13  | 40 and bulk near3 dop\$4  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:43 |
| L42 | 13  | 40 and (bulk\$4 near3 dop\$4)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:44 |
| L44 | 2   | 42 and 38   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 15:45 |
| S1  | 3   | "6647041"   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2005/07/27 11:03 |